

**Work Plan for Columbia/Snake Temperature TMDLs
Idaho, Oregon, Washington and EPA Region 10
April 16, 2001**

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Key Dates

April 1, 2001

- Written Communication and Collaboration Strategy.

April 30, 2001

- Final Report, "Columbia River Temperature Assessment: Simulation Methods" including Peer Review Comments and Responses
- CD with the model and supporting documentation for distribution on request
- Paper on the use of a 1 dimensional model for the TMDL

June/July, 2001

- **Public Workshop on the Water Quality Modeling**

June 30, 2001

- Written Problem Assessment for public review.
- Written Report on Numerical Targets for public review.

July/August, 2001

- **Public Workshop on the Problem Assessment and Numerical Targets**

September 1, 2001

- Written report on Loading Capacity and Allocations for public review.

Sept/October, 2001

- **Public Workshop on the Loading Capacity and Allocations**

February 1, 2002

- Draft TMDL for public comment.

March, 2002

- **State Public Meetings on the Draft TMDL**

July/August, 2002

- Final TMDL

Work Completed by December 31, 2001

**Draft Components of the TMDL Work to be Completed
and Receive Public Input by December 31, 2001**

Water Quality Modeling;
Problem Assessment;
Numerical targets;
Loading Capacities and Allocations;

To be Completed in 2002

February 1, 2002
Draft TMDL for Public Comment

March, 2002
Public Meetings on the Draft TMDL

June 15, 2002
Final TMDL

Introduction

The States of Idaho, Oregon and Washington and EPA Region 10 are working in coordination with the Columbia Basin Tribes to develop Total Maximum Daily Loads (TMDL) for Temperature and Total Dissolved Gas (TDG) on the Columbia and Snake Rivers. A TMDL for a water body is a document that identifies the amount of a pollutant that the water body can receive and still meet Water Quality Standards (WQS). It also allocates responsibility for reductions in the pollutant load that are necessary to achieve WQS. A TMDL is required by the Clean Water Act for any stream reaches included by States or Tribes on their lists of impaired waters required under Section 303(d) of the Clean Water Act. Impaired waters are those that do not attain State or Tribal Water Quality Standards (WQS). The Snake River from its confluence with the Salmon River at RM 188 to its confluence with the Columbia has been included on the 303(d) list of impaired waters for Temperature and TDG by either Idaho, Oregon or Washington as appropriate. Oregon and Washington included all of the Columbia River on their 303(d) lists for TDG and most of the Columbia River on their lists for Temperature. The Columbia River also exceeds the WQS of the Colville Confederated Tribes for Temperature and TDG. The Spokane Tribe of Indians has WQS for the Columbia River that have been adopted by the Tribe but not yet approved by EPA. These standards are also exceeded in the Columbia River.

The States are responsible for developing TMDLs for waters included on their 303(d) lists. EPA and the Tribes share responsibility for developing TMDLs on Tribal lands. EPA also oversees the entire 303(d)/TMDL process with responsibility for approving or disapproving state issued 303(d) lists and TMDLs. If EPA disapproves a State TMDL, EPA is required to develop a TMDL to replace the disapproved one. EPA and the three States have agreed to work together to develop the TMDLs for Temperature and TDG because of the regional significance of the Snake and Columbia Rivers and the complex nature of interjurisdictional TMDLs.

The TMDLs will include that portion of the Snake River beginning at the mouth of the Salmon River (RM 188) and extending to the confluence of the Snake River with the Columbia River. The TMDLs will also include all of the Columbia River that is located in the United States, including Lake Roosevelt. EPA will take the lead for developing the Temperature TMDL for both rivers and the States will issue the temperature TMDLs as appropriate to each state. EPA will develop and issue the Temperature and TDG TMDLs for waters within the tribal reservations. The States will take the lead for developing and issuing the TDG TMDL for the rest of the two rivers. The parties have agreed to cooperate in the collection of data, making technical and policy decisions, and providing for public participation.

This work plan addresses development of the Temperature TMDL. In addition to the writing of the draft TMDL, it describes the five major tasks which together lead to development of the TMDL. It identifies the roles of the States, Tribes and EPA in accomplishing the tasks and lists the products and proposed due dates for each product. The tasks addressed in this work plan are:

1. Modeling Assessment;
2. Problem Assessment;
3. Numerical Targets;
4. Loading Capacity and Allocations,
5. Public Participation,
6. Drafting the TMDL.

The first four tasks of this work plan will result in discreet products that will make up the bulk of the TMDL. They are listed in the sequence in which they will be developed. Each product is essential to the development of the succeeding products. Each of these first four tasks will involve significant technical and policy decisions for which we must engage the public and specific interested groups. Task 5, Public Participation, is the process through which we will communicate and coordinate with the general public and interested groups through each of the first five tasks and for the TMDL as a whole.

The TMDL analysis will include the following elements. Those marked with an * are required by the Clean Water Act or implementing regulations:

- Scope of TMDL;
- Applicable Water Quality Standards and Numeric Targets*;
- Problem Assessment/Pollutant Source Analysis;
- Linkage Between Pollutant Loading and In Stream Response;
- Loading Capacity*;
- Wasteload Allocations*;
- Load Allocations*;
- Margin of Safety*;
- Seasonal variation*;
- Public Participation*.
- State Developed Implementation Plan (Discretionary)

Each of these essential elements of a TMDL will be developed as part of one of the six tasks in this work plan.

The following sections describe the six tasks in detail, identify the required parts of a TMDL that will be included in each task, describe the roles of the States, Tribes and EPA in accomplishing the task and lists products and proposed due dates for each product.

Modeling Assessment Reach by Reach:

Description

The water quality modeling of water temperature in the mainstem of the Columbia and Snakes Rivers is the first critical task that will be completed and shared with the public and interested groups. The model is the analytical tool that will be used to complete much of the work in the subsequent tasks. It will be used to:

- simulate the current temperature regime at each dam and in selected reaches of the river;
- simulate what temperature would be at each dam location and river reach if the dams were not present;
- analyze the effects of the tributaries, NPDES dischargers and other sources on water temperature.

It is important that the model is appropriate for the task and that it can be utilized with the quantity and quality of input data that we have available. Since the modeling is critical to the rest of the TMDL development process, it is important that we share it with the public and interested groups, listen to their feedback and alter the model, as appropriate, to reflect new information. EPA completed much of the model development in 1999 and 2000 and conducted a peer review of the model in 1999. The original model did not cover the entire geographic scope of this TMDL. EPA is currently expanding the model to include the entire area and finalizing responses to comments received during the peer review.

Roles

EPA	-	Model development and peer review. Plan and implement public participation;
States	-	Provide data on NPDES Discharges to the rivers; Conduct internal reviews of modeling; Support modeling through participation on technical committee; Support public participation;
Tribes	-	Conduct internal reviews of modeling; Support modeling through participation on technical committee; Support public participation;

Elements of the TMDL Analysis Addressed in this Component

- Pollutant Source Analysis;
- Linkage Between Pollutant Loading and In-stream Response;
- Margin of Safety.
- Seasonal variation;

Products and Schedule

- **Final Report, “Columbia River Temperature Assessment: Simulation Methods” - April 30, 2001.**
- **Peer Review Comments and Responses - April 30, 2001.**
- **CD with the model and supporting documentation - April 15, 2001.**
- **Paper on the use of a 1 dimensional model for the TMDL - April 30, 2001.**
- **Paper on how tributaries are factored into the TMDL - May 30, 2001**
- **Public Workshop on the Water Quality Modeling - June/July, 2001**

Problem Assessment:

Description

The Problem Assessment is intended to characterize the temperature regime of the mainstems of the Columbia and Snake Rivers and define the problems resulting from that altered regime. It will set the stage for the TMDL to follow. In general, it will describe the point, nonpoint and natural sources of heat and it will describe the important characteristics of the watershed pertaining to temperature. More specifically, the Problem Assessment will:

- describe changes to the rivers due to power development: effects on stream width, depth, current and flow;
- describe the effects on stream temperature and ultimately on salmon;
- evaluate and discuss the tributaries as sources of heat to the mainstems;
- evaluate and discuss the effects of NPDES dischargers and other sources of heat on the mainstems' temperature regimes;
- identify the Scope of the TMDL; and
- describe the mainstems as they are identified on the States; 303(d) lists;

The spawning, rearing and migration of salmonids is the most sensitive use of the river to be protected by WQS for temperature. It is also the focus of Regional efforts to recover endangered salmon in the Snake and Columbia Rivers. Therefore, the Problem Assessment will discuss the effects of changes to the temperature regime of the rivers on salmon extensively. The RBM 10 model will be the main tool used to characterize the temperatures regimes of the rivers and the effects of point and nonpoint sources of pollution and changes to the rivers.

Roles

- | | | |
|--------|---|--|
| EPA | - | Write the Problem Assessment;
Plan and implement public participation; |
| States | - | Conduct internal review of the assessment;
Participate on the technical committee;
Support public participation; |
| Tribes | - | Conduct internal review of the assessment;
Participate on the technical committee;
Support public participation; |

Elements of the TMDL Analysis Addressed in this Component

- Scope of TMDL;
- Pollutant Source Analysis;
- Linkage Between Pollutant Loading and In stream Response;

Products and Schedule

- **Written Problem Assessment for public review - June 30, 2001.**
- **Public Workshop on the Problem Assessment and Numerical Targets - July/August, 2001.**

Numerical Targets Reach by Reach:

Description

Three states and one tribe have approved Water Quality Standards that pertain to the project area of this TMDL: Colville Confederated Tribes; Idaho, Oregon, and Washington. The Spokane Tribe of Indians has tribally adopted standards that have not yet been submitted to EPA for approval. The standards vary by state and tribe and by river reach within states. Further, many of the standards are linked to human activities and require an analysis to determine the effect of human activities on temperature. Therefore, determination of the numerical targets of the TMDL reach by reach will be a significant technical exercise. We will develop it as a distinct piece of the TMDL and seek input from the public and affected groups.

Roles

- | | | |
|--------|---|---|
| EPA | - | Evaluate the effects of human activity on temperature;
Compare coextensive standards;
Technical lead for developing numerical targets for each reach;
Plan and implement public participation; |
| States | - | Provide and interpret WQS;
Work with EPA on evaluation and comparison of standards;
Policy lead for developing the numerical targets within their jurisdictions;
Support public participation; |
| Tribes | - | Provide and interpret WQS;
Work with EPA on evaluation and comparison of standards;
Determine the numerical targets within their jurisdictions;
Support public participation; |

Elements of the TMDL Analysis Addressed in this Component

- Applicable Water Quality Standards and Numeric Targets.

Products and Schedule

- **Written report on Numerical Targets for public review - June 30, 2001.**
- **Public Workshop on the Problem Assessment and Numerical Targets - July/August, 2001.**

Loading Capacity and Allocations:

Description

This task will determine the loading capacity for heat, reach by reach and allocate that capacity. In reaches governed by standards that prohibit heat inputs from human activity, the load to allocate will be the same as the capacity. In some cases the standards allow some increase over natural temperatures and that increase will be the load available to allocate. Initially we will develop a draft allocation and engage in discussions with affected groups. As part of this work plan EPA is developing a Communication and Collaboration Plan that will outline how we will work with users of the river that are potentially affected by the load and waste load allocations. Interested groups include Tribes, NPDES Dischargers, Public Utility Districts, Federal Dam Operators, Forestry Groups, Agricultural Interests, Recreation Interests, Municipalities and many more. EPA and the states will meet informally with any of these groups to share information and receive input.

Roles

- | | | |
|--------|---|---|
| EPA | - | Develop the loading capacity of each reach;
With the states and tribes develop the load and wasteload allocations;
Plan and implement public participation; |
| States | - | With the tribes and EPA develop the load and wasteload allocations;
Support public participation; |
| Tribes | - | With the states and EPA develop the load and wasteload allocations;
Support public participation; |

Elements of the TMDL Analysis Addressed in this Component

- Loading Capacity;
- Wasteload Allocations;
- Load Allocations;
- Margin of Safety;
- Seasonal variation.

Products and Schedule

- **Written report on Loading Capacity and Allocations for public review - September 1, 2001.**
- **Public Workshop on the Loading Capacity and Allocations - Sept/October, 2001**

Public Participation

Description

EPA and the states and tribes plan to communicate and collaborate with the general public and specific interested groups throughout the TMDL development process. To that end we are developing a Communication and Collaboration Strategy. It will include:

- a discussion of the background leading to development of a TMDL;
- the key messages we want to deliver to the public at the beginning of the process;
- a list of potentially interested groups;
- a description of the work necessary to develop the TMDL;
- a detailed communication and coordination strategy;
- a running list of meetings and workshops held; and
- a list of technical contacts;
- a formal public comment process for the drafts TMDL.

Roles

EPA	-	Lead for communication and collaboration on TMDL;
States	-	Support communication and collaboration on TMDL;
Tribes	-	Support communication and collaboration on TMDL;

Required TMDL Elements

- Public Participation.

Products and Schedule

- **Written Communication and Collaboration Strategy - April 15, 2001.**

Communication and Collaboration To Date

- Columbia River Tribal TMDL Workshop, November 17-18, 2000, Spokane;
- TMDL Workshop (open to public), November 28, 2000, Portland;
- Meeting with the Corps, BoR and BPA, January 12, 2001, Portland;
- Presentation to NMFS Implementation Team, January 11 and February 8, 2001;
- Presentation to the Water Quality Team, January 16, 2001, Portland;
- Meeting with the Corps, BoR and BPA, January 30, 2001, Portland;
- Meeting with Grant County PUD, February 2, 2001, Seatac;
- Meeting with Mid-Columbia PUDs, February 14, 2001, Wenatchee;
- Presentation to the North West Pulp and Paper Association River Mills Task Force, February 27, 2001, Portland;
- Presentation to the Columbia Basin Project Water Quality MOU Oversight Panel (Irrigation Districts, BoR, USGS, Ecology, and EPA) March 9, 2001, Pasco;
- Meeting with Mid-Columbia PUDs and Ecology, March 13, 2001, Seatac;
- Monthly updates and discussion with the Water Quality Team, Portland.

Draft and Final TMDLs

EPA and the States, in coordination with the Tribes will evaluate the information gathered from public workshops, meetings with potentially affected parties and internal reviews of the reports generated above to develop the draft TMDL. We will not be responding formally at this stage to comments received during the development process outlined above. The draft TMDL will represent our response to the information received. As with most of the development process outlined above, EPA will take the lead for development of the draft TMDL utilizing State and Tribal input for technical and policy decisions. EPA may utilize a contractor to assist in development of the draft TMDL. We will Target February 1, 2002 for distribution of the draft and the beginning of a sixty day public review period. We will conduct a number of public meetings in the Region during March, 2002.

The States will issue the final TMDLs for Temperature in July or August, 2000. We will respond formally to written comments received during the public comment period. EPA will take the lead on developing the Response to Comments with State and Tribal input on technical and policy issues.

Products and Schedule

- **Draft TMDL for Public Comment - February 1, 2002;**
- **Public Meetings on the Draft TMDL - March, 2002;**
- **Final TMDLs - July/August, 2002.**